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Abstract Title:

**Spatial Distribution of Accuracy of Aerosol Retrievals from Multiple
Satellite Sensors**

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SUMMARY

Remote sensing of aerosols from space has been a subject of extensive research, with multiple sensors retrieving aerosol properties globally on a daily or weekly basis. The diverse algorithms used for these retrievals operate on different types of reflected signals based on different assumptions about the underlying physical phenomena. Depending on the actual retrieval conditions and especially on the geographical location of the sensed aerosol parcels, the combination of these factors might be advantageous for one or more of the sensors and unfavorable for others, resulting in disagreements between similar aerosol parameters retrieved from different sensors. In this presentation, we will demonstrate the use of the Multi-sensor Aerosol Products Sampling System (MAPSS) to analyze and intercompare aerosol retrievals from multiple spaceborne sensors, including MODIS (on Terra and Aqua), MISR, OMI, POLDER, CALIOP, and SeaWiFS. Based on this intercomparison, we are determining geographical locations where these products provide the greatest accuracy of the retrievals and identifying the products that are the most suitable for retrieval at these locations.

The analyses are performed by comparing quality-screened satellite aerosol products to available collocated ground-based aerosol observations from the Aerosol Robotic Network (AERONET) stations, during the period of 2006-2010 when all the satellite sensors were operating concurrently. Furthermore, we will discuss results of a statistical approach that is applied to the collocated data to detect and remove potential data outliers that can bias the results of the analysis.